

REMARKS:

This paper is herewith filed in response to the Examiner's final Office Action mailed on December 19, 2007 for the above-captioned U.S. Patent Application. This Office Action is a final rejection of claims 1-5, 7-34, and 36 of the application.

More specifically, the Examiner has rejected claim 21 under 35 USC 101 because the claimed invention is directed to non-statutory subject matter; rejected claims 1-5, 7-16, 19-20, 22-34, and 36 under 35 USC 102(e) as anticipated by Larsson (US6,751,200); rejected claims 17 and 18 under 35 USC 103(a) as being unpatentable over Larsson in view of Isumi (US5,815,816); and rejected claim 21 under 35 USC 103(a) as being unpatentable over Larson in view of Langberg (US5,852,630). The Applicant respectfully disagrees with the rejections.

Regarding the rejection under 35 USC 101, claim 21 has been amended to address the rejection. Support for the amendment can at least be found on page 10, lines 12-15. No new matter is added. The rejection is seen as overcome and the Applicant respectfully requests that the rejection be removed.

The Applicant notes the invention relates to a method of sending a data packet from a first device located in a first piconet to a destination device located in a second piconet, both devices being part of a scatternet. The data packet is sent **over a newly created link that temporarily short-circuits the existing network topology without permanently changing it**. The first device determines whether or not a direct radio communication link can be made to the destination device. This may be achieved by the first device maintaining a list of devices that are within its radio communication range and determining whether the destination device appears within that list. The list may be maintained using a Bluetooth enquiry procedure. If such a link cannot be established the first device sends a routing request within the scatternet so that the data can be transmitted to the destination device through the existing piconets.

Regarding the rejection of claim 1 the Examiner states:

“Larsson et al. discloses a method and system, comprising: creating a direct radio communications link between a first device in a first piconet of a scatternet (any node shown in Fig. 2 can be a first device, for example, node M8 in piconet 9 of the scatternet shown in Fig. 2; a piconet is a star-topology sub-network; and a scatternet is a distributed low power radio frequency network) and a destination device in a second piconet of the scatternet (any node shown in Fig. 2 that is in a piconet that is not occupied by the first device can be the destination device, for example, a slave node in piconet 7), wherein the direct radio communications link creates a short-circuit in the network topology and transmitting a packet via the direct radio communications link (the link created by piconet 8 that connects the two node as shown on Fig. 2 creates the short-circuit).”

The Applicant notes that Figure 2 as cited by the Examiner in Larsson appears to illustrate a piconet 8 that joins piconet 9 and piconet 7 which are also connected via piconets 10, 4, and 5. However, Larsson does not appear to disclose or suggest that piconet 8 is a short-circuit created for the purposes of delivering a packet between M8 and its slave. It would appear that piconet 8 as illustrated in Figure 2 in Larsson is merely an existing part of the scatternet topology. The Applicant contends that in clear contrast to Larsson, claim 1 relates to a method wherein **a direct radio communications link creates a short-circuit in a scatternet topology for the purpose of delivering a packet**. For at least this reason the Applicant respectfully requests that the Examiner reconsider and remove the rejection of claim 1.

Further, in regards to claim 17 the Examiner states:

“Larsson et al. discloses all of the subject matter as discussed above **but fails to disclose that the direct radio communications link is temporary**; and the direct radio communications link is released after a predetermined period of inactivity. Isumi teaches that temporarily establishing a connection and releasing the connection after a predetermined period of inactivity in the connection (column 13, line 64 — column 14, line 3). It would have been desirable to temporarily establishing a connection and releasing the connection after a predetermined period of inactivity in the connection because it would make system resource utilization more efficient. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method as taught by Isumi in the system of Larsson et al.,” (emphasis added).

The Applicant notes that claim 17 relates to a method as claimed in claim 1 **wherein the direct radio communications link is temporary**.

It is also noted that in the rejection the Examiner admits there is no disclosure in Larsson that a piconet is created temporarily. Further, the Examiner appears to suggest that the method of Isumi would be incorporated into Larsson in order to overcome this shortfall. As cited Isumi discloses:

“Alternatively, when receiving the setup message from the radio control station 4, the communication channel management unit 20 may temporarily acquire a circuit communication channel for a **predetermined period of time** and **moreover release this circuit communication channel if no radio link setup request message is sent** from the radio subordinate unit within this predetermined period of time,” (emphasis added), (col. 13 line 64 to col. 14, line 3).

It can be seen that as cited Isumi merely discloses that a circuit communication channel may be reserved and then released if not used within a predetermined period of time. The Applicant argues that Isumi clearly does not relate to a creation of a shortcut in a network topology and, as such, Isumi can not be seen to disclose or suggest that such a shortcut should be temporary. Thus, for at least this reason Isumi is not seen to address the shortfall of Larsson as stated above.

Moreover, the Applicant contends that a person skilled in the art would have no motivation to combine Isumi with Larsson. The Applicant contends that there is not seen to be any motivation whatsoever to isolate, in Isumi, a particular disclosure such as reserving a communication channel, and then incorporate the disclosure into a different technical field, namely the Bluetooth piconets disclosed in Larsson.

In addition, it is noted that in the Response to Arguments section of the Office Action the Examiner states:

“Further more, Applicant argues that there is no suggestion that the communication channel management unit 20 would operate with a “piconet establishment procedure”. The Examiner respectfully disagrees. Isumi’s suggestion of releasing a communication channel after a predetermined period of time would help improve system resource utilization in the system of Larsson.”

The Applicant respectfully disagrees with the Examiner. Larsson clearly discloses that the whole piconet topology should be redefined, which Larsson acknowledges is an overhead intensive operation (see col. 6, lines 23-64). The Applicant contends that there would be no reason to have this overhead intensive operation in Larsson performed only temporarily or for a predetermined period of time as cited by the Examiner in Isumi. Larsson appears to disclose that if the present network topology is not optimal then it should be permanently changed. Therefore, the Applicant contends that it would at least be counter to the method in Larsson to combine Isumi with Larsson. The Applicant respectfully submits that the combination of Larsson and Isumi in the rejection is improper and that the Examiner appears to be relying on impermissible hindsight reasoning to modify Larsson in view of Isumi.

For at least these reasons the Applicant respectfully requests that the Examiner reconsider and remove the rejection of claim 17.

Further, the Applicant contends that for at least the reason that claim 20 recites features similar to claim 1 as stated above, the references cited can not be seen to disclose or suggest claim 20. The rejection of claim 20 should be removed.

With regards to the rejections of claim 23 and claim 29 the Examiner states:

“Larsson et al. discloses delivering a packet from a first device in a first piconet of a scatternet (any node shown in Fig. 2 can be a first device, for example, M2; M2 is a slave device in piconet 1 of the scatternet shown in Fig. 2) to a destination device in a second piconet of the scatternet (any node shown in Fig. 2 that is in a piconet that is not occupied by the first device can be the destination device, for example node 205; 205 is a slave device in piconet 3) comprising: receiving the packet at the first device (column 5, line 44; a [device] in a piconet will receive and send data packets or routing packets such as REQUEST/REPLY messages, column 4, lines 22 - 33); determining whether the creation of a direct radio communications link between the first device and the destination device that short-circuits the network topology is possible; and if it is not possible, forwarding the packet within the scatternet (Fig. 7)”

The Applicant submits that claim 23 and claim 29 relate to determining whether the creation of a direct radio communication link that short-circuits the network topology is possible and, if it is not possible, a packet/route request is forwarded.

The Applicant notes that the Examiner relies on Figure 7 of Larsson when alleging that these features of claims 23 and 29 are anticipated by Larsson. However, the Applicant disagrees with the Examiner. The Applicant submits that Figure 7 in Larson relates to an embodiment in which a route discovery is first initiated over an existing piconet (step 610, Figure 6), then if a timely reply is not received (step 615, Figure 6) there is immediate initiation of a new route discovery process that attempts to establish new piconets (step 635, Figure 6 and step 705, Figure 7). Thus, in Larsson it can be seen that if a reply message, in response to an original request message, is received prior to establishing a route through new piconets, the source node may begin transmitting packets to the destination node over the route defined by the reply message. This process in Larsson appears to continue until a more efficient route is established through the newly formed piconet, (col. 6, lines 4-22).

The Applicant submits that in regards to Figure 7 Larsson merely discloses that an existing suboptimal scatternet should be used for routing packets while a new optimal scatternet is being formed (col. 6, lines 4-64). Moreover, the Applicant contends that in Larsson it can be seen that packets are forwarded within the existing scatternet whether or not a new scatternet has been or can be formed.

The Applicant notes that claim 23 clearly relates to determining whether the creation of a direct communications short-circuit of the network topology is possible, and if the creation of the short-circuit is not possible then forwarding the packet within the existing scatternet. Further, it is noted that claim 29 recites features similar to claim 23 as stated. The Applicant contends that claims 23 and 29 are clearly distinguishable from Larsson which discloses that packets should be forwarded through the existing scatternet even while an attempt is being made to form a new scatternet (col. 6, lines 4-22).

The Applicant contends that for at least the reasons stated Larsson clearly can not be seen to disclose or suggest at least where claim 23 recites “determining whether the creation of a direct radio communications link between the first device and the destination device that short-circuits the network topology is possible; and, if it is not possible, forwarding the packet within the scatternet”. Therefore, the rejection of claim 23 should be removed.

Further, for at least the reasons stated the Applicant contends that Larsson fails to disclose or suggest at least where claim 29 recites “determining, at the source device, whether the creation of a direct radio communications link between the source device and the destination device that short-circuits the network topology is possible; and if it is not possible, generating, at the source device, a routing request for forwarding within the scatternet.” Thus, the rejection of claim 29 should be removed.

In addition, although the Applicant does not agree that a combination of the references cited is feasible or possible, for at least the reasons already stated the Applicant contends that such a combination would still not suggest the claims.

In addition, it is noted that although the Applicant has not argued all the rejections in the Office Action the Applicant does not acquiesce to any rejections not presently argued.

Further, for at least the reasons that claims 2-5, and 7-19; 21; 24-28; 30; and 32-34 and 36 depend from claims 1, 20, 23, 29, and 31, respectively, the references cited are not seen to disclose or suggest these claims.

Based on the above explanations and arguments, it is clear that the references cited cannot be seen to disclose or suggest claims 1-5, 7-34, and 36. The Examiner is respectfully requested to reconsider and remove the rejections of claims 1-5, 7-34, and 36 and to allow all of the pending claims 1-5, 7-34, and 36 as now presented for examination.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in

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the application are clearly novel and patentable over the prior art of record. Should any unresolved issue remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

Respectfully submitted:



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26 February 2008

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